PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2001-162113
(43)Date of publication of application : 19.06.2001

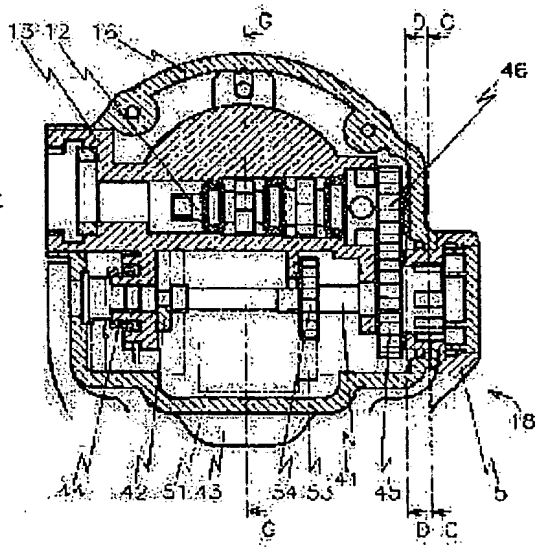
(51)Int.Cl. B01D 29/60
E03C 1/10
F16K 11/056
F16K 31/53

(21)Application number : 11-348847
(22)Date of filing : 08.12.1999

(71)Applicant : TORAY IND INC
(72)Inventor : ISOBE TAKU
YONEZAWA YASUO

(54) SWITCHING VALVE AND WATER PURIFIER

(57)Abstract:
PROBLEM TO BE SOLVED: To provide a switching valve which need not be increased in size even if the rotation angle of a lever is decreased to facilitate the operation of the lever of the switching valve.
SOLUTION: This switching valve is provided with a plurality of passages, a valve element for opening or closing the passages, a rotatable valve element driving means acting on the element to selectively switch the passages, a switching means rotating on a center axis different from that of the valve element driving means and acting on the valve element driving means to switch the passages and a transmitting means for transmitting the operating force of the switching means to the valve element driving means.



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PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2000-304141
(43)Date of publication of application : 02.11.2000

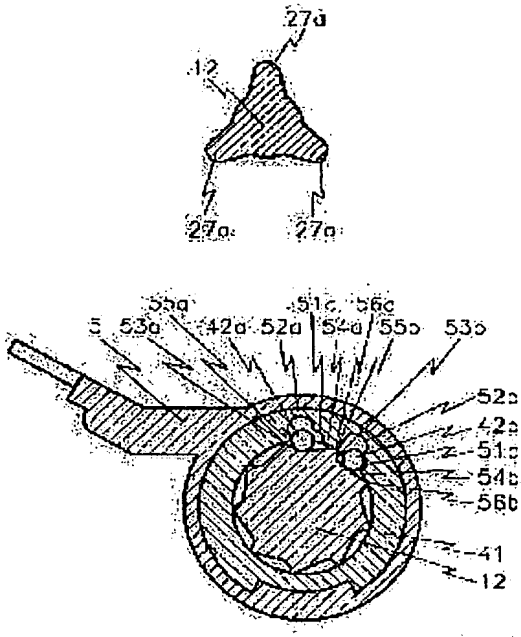
(51)Int.Cl. F16K 11/16
F16K 11/056

(21)Application number : 11-109231
(22)Date of filing : 16.04.1999

(71)Applicant : TORAY IND INC
(72)Inventor : ISOBE TAKU
YONEZAWA YASUO

(54) CHANNEL SWITCHING VALVE AND WATER PURIFIER

(57)Abstract:
PROBLEM TO BE SOLVED: To eliminate the necessity of performing a visual confirmation for rotational amount of a switching operating means at the time of performing a channel switching operation and to improve operability by providing an engagement part that transmission members are engaged at the time of switching a channel on either one of a valve element driving means and a switching operating means and providing a recessed part releasing the transmission members on the other hand.
SOLUTION: In a channel switching valve equipped on a water purifier, a valve body is provided with a valve element driving means 12. The means 12 is provided with cam parts 27a to 27c at positions opposed to a plurality of water passages. By rotating the valve element driving means 12 by 40° , for instance, a ball within the valve body is pushed up and one of the water passages is opened. A switching operating means rotating and operating this valve element driving means 12 is constituted of a ball receiving part 41 rotating integrally with a lever 5 and steel balls 42a, 42b transmitting rotary force of the lever 5 and the ball receiving part 41 to the valve element driving means 12. Moderation feeling is obtained in cooperation with recessed parts 52a, 52b on the ball receiving part 41 side and engagement parts 52a, 53b on the valve element driving means 12 side.



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PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2000-210661
(43)Date of publication of application : 02.08.2000

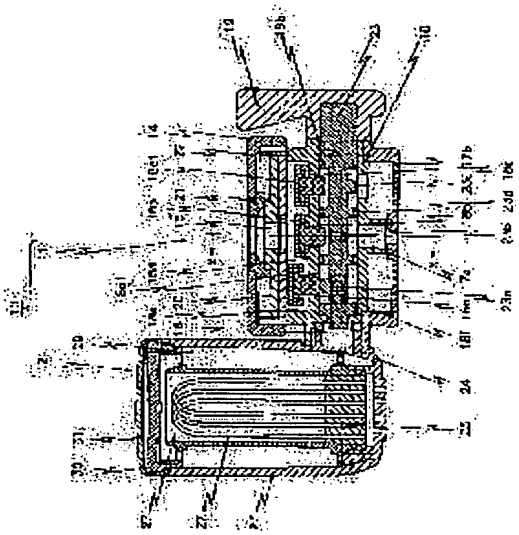
(51)Int.Cl. C02F 1/44
F16K 11/07

(21)Application number : 11-016077
(22)Date of filing : 25.01.1999

(71)Applicant : TORAY IND INC
(72)Inventor : TOKUDA TAKASHI
ISOBE TAKU
YONEZAWA YASUO

(54) MULTIPLE WAY VALVE AND WATER PURIFIER

(57)Abstract:
PROBLEM TO BE SOLVED: To prevent the wear of the closing part and improve the durability of the valve body itself by constituting a multiple way valve in a way that a valve casing is provided having an upper chamber with a fluid inlet and a lower chamber with a fluid outlet and a desired communicated port is opened by moving either one of the plural valves equipped in the upper chamber.
SOLUTION: A valve casing 18 is divided into an upper chamber 18e and a lower chamber 18f by a dividing wall 18d having three communicative ports 18a-18c. The upper chamber 18e is provided with a raw water inlet 15, and the lower chamber 18f is provided with a raw water feeding port 16 and a raw water outlets 17a, 17b. And the upper chamber 18e is provided with valve elements 18a1-18c1 whose lower end parts project into the lower chamber 18f in engagement conditions. And a switching lever 19 is rotated to rotate a rotating shaft 23 through a prescribed angle, thereby pushing up the valve discs engaged with the corresponding communicative ports to open the communicative ports by cams 23a-23c formed integrated to the rotating shaft 23 and to make the raw water inlet 15 communicate with any of the raw water feeding port 16 and the raw water outlets 17a, 17b.



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PATENT ABSTRACTS OF JAPAN

(11)Publication number : 11-270720
(43)Date of publication of application : 05.10.1999

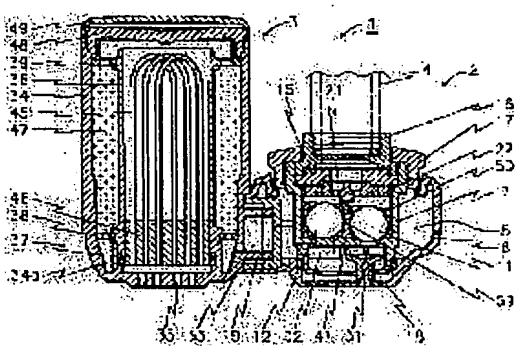
(51)Int.Cl. F16K 11/056
B01D 35/04
C02F 1/28

(21)Application number : 10-092564
(22)Date of filing : 20.03.1998

(71)Applicant : TORAY IND INC
(72)Inventor : ISOBE TAKU
YONEZAWA YASUO

(54) MULTIDIRECTIONAL VALVE AND WATER PURIFIER

(57)Abstract:
PROBLEM TO BE SOLVED: To prevent a fluid from flowing out from an outflow port to be closed even when there is a difference in passage resistance on the downstream of a multidirectional valve by providing a ball movement suppressing member suppressing a ball from separating from the outflow port when the outflow port is switched from an opened state to a closed state.
SOLUTION: When a push button is pressed, a first outflow port 31 is opened, and raw water starts flowing out from a shower discharge port 18 through the first outflow port 31. A second ball 12 tends to separate from a second outflow port 32 via the backflow flowing into a valve case 7 from the second outflow port 32, however a ball movement suppressing member 50 covering the second ball 12 suppresses its movement, and the second ball 12 is suppressed from separating from the second outflow port 32. When the backflow ceases and a fluid starts flowing out from the second outflow port 32, the second ball 12 is drawn by the flow and inserted into the second outflow port 32. The fluid is prevented from flowing out from both outflow ports 31, 32 simultaneously, and passages can be surely switched.



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(11)Publication number : 11-217858
(43)Date of publication of application : 10.08.1999

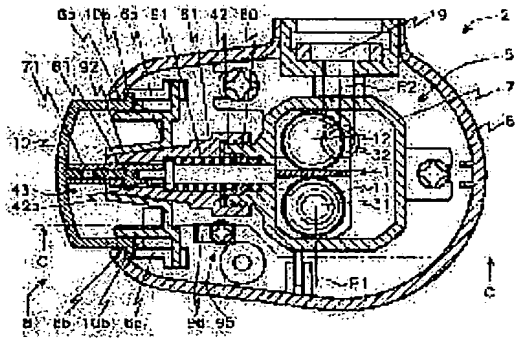
(51)Int.Cl. E03C 1/10
B01D 35/04
C02F 1/28
C02F 1/44
F16K 11/00

(21)Application number : 10-035515
(22)Date of filing : 02.02.1998

(71)Applicant : TORAY IND INC
(72)Inventor : ISOBE TAKU
NISHIKAWA TAKESHI
YONEZAWA YASUO

(54) MULTIDIRECTIONAL VALVE AND WATER CLEANER

(57)Abstract:
PROBLEM TO BE SOLVED: To confirm the opening and closing state of a flow passage by providing a valve body for opening and closing the outflow opening of a valve case, a push member for selectively communicating the outflow opening with an inflow opening, and a stop means of the push member for showing the communicating state of the outflow opening and the inflow opening.
SOLUTION: When a push button 10 is depressed, a reciprocating cam 71 is slid in the direction of a valve case 7 inside a guide cylinder 61, a rotating cam 81 is slid through a rotation cam projection engaged with a reciprocating cam projection, and a reciprocating shaft 42 and an abutting member 41 are moved to a second stop position P2. When the rotation cam projection is slipped off from the deep groove of the guide cylinder 61, the rotation cam 81 is rotated. When the push operation of the push button 10 is stopped, the rotation cam is further rotated by urging of a spring 91. The rotation cam projection is engaged, the rotation cam 81 and the reciprocating shaft 42 are stopped, and rearward movement of the reciprocating cam 71 and the push button 10 is suppressed. Furthermore, an L-shaped plate spring 96 is engaged with the notch of the push button 10 and the movement of the push button 10 is suppressed. Thereby the opening and closing state of a flow passage can be easily confirmed by seeing the symbol of a display plate 92 from the window 10b of the push button 10.



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PATENT ABSTRACTS OF JAPAN

(11)Publication number : 09-264441
(43)Date of publication of application : 07.10.1997

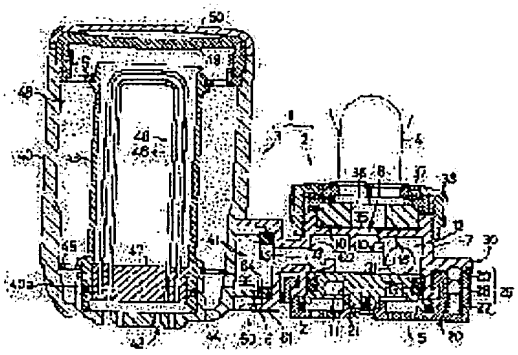
(51)Int.Cl. F16K 11/14
B01D 35/04
C02F 1/28
C02F 1/44

(21)Application number : 08-103296
(22)Date of filing : 28.03.1996

(71)Applicant : TORAY IND INC
(72)Inventor : ISOBE TAKU
YONEZAWA YASUO
ITAKURA JUNJI

(54) DIRECTIONAL CONTROL VALVE AND WATER PURIFIER

(57)Abstract:
PROBLEM TO BE SOLVED: To provide a directional control valve which can be composed thin in thickness and small-sized, and a water purifier equipped with the said directional control valve.
SOLUTION: In a directional control valve equipped in a valve body 2, a valve case 7 having the second flow out port 16 to communicate with a raw water flow-in port 8 and a filtering cartridge 3 composes a basic body, and a valve turning plate 11 having the first flow-out port of the raw water is turnably attached to the valve case 7. By the rotating operation of a valve operation section 20 fixed to the plate 11, the first and the second sphere Q1, Q2 arranged in a valve chamber 12 formed of the valve case 7 and the plate 11 function so that the first sphere Q1 and the second sphere Q2 may severally open and close the first and the second flow-out port 16 as they are severally held by the first and the second position regulating members 18, 19.



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PATENT ABSTRACTS OF JAPAN

(11)Publication number : 09-264436
(43)Date of publication of application : 07.10.1997

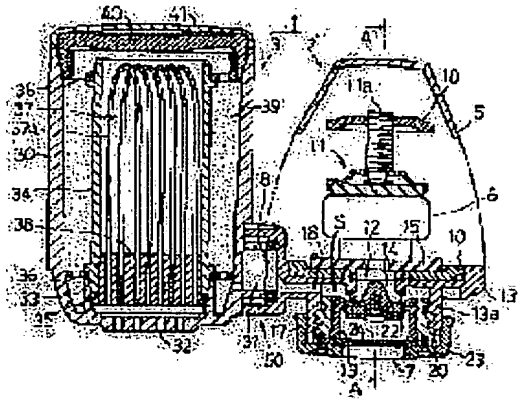
(51)Int.Cl. F16K 11/04
B01D 35/04
C02F 1/28
C02F 1/44

(21)Application number : 08-097600
(22)Date of filing : 26.03.1996

(71)Applicant : TORAY IND INC
(72)Inventor : ISOBE TAKU
ITAKURA JUNJI
YONEZAWA YASUO

(54) DIRECTIONAL CONTROL VALVE AND WATER PURIFIER

(57)Abstract:
PROBLEM TO BE SOLVED: To provide a directional control valve which can be composed thin in thickness and a water purifier which is equipped with the said directional control valve, and can easily supply water to even a container being high in height without being a hindrance in the case of use.
SOLUTION: This water purifier is equipped with a valve body 2 provide with a directional control valve for changing over a flow-in raw water to a flow path toward a raw water discharge port 7 or a flow path toward a raw water ejecting port 8, and a cartridge 3 for purifying the raw water. A spool shaft 20 having a cylindrical seal member 19 in its inside is fitted in the opened part 13a of a valve case 13. A state where the spool shaft 20 is vertically displaced with spiral turn in the opened part 13a by turning operation of a switching lever 23, and abuts so that the seal member 19 may encircle the lower circumference of a flow-in port 12 for forming a flow path in the seal member 19, and a state where the inner flow path of the seal member 19 is closed by an engaging plate 22 at the same time when the seal member 19 separates from a flow-in part 12 to form a flow path to communicate with the cartridge 3 are changed over by the rotating operation of a changing over lever 23.



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PATENT ABSTRACTS OF JAPAN

(11)Publication number : 09-253633
(43)Date of publication of application : 30.09.1997

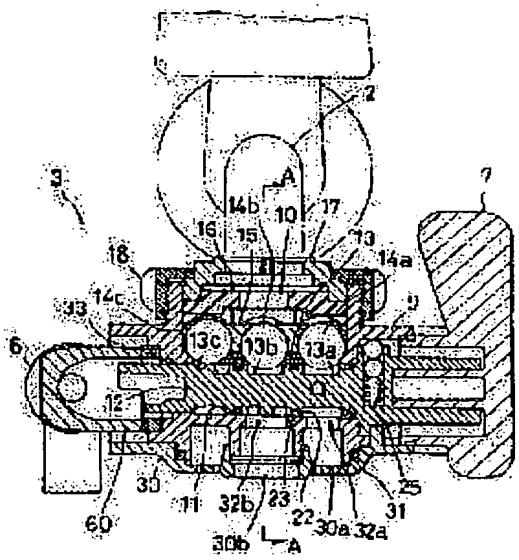
(51)Int.Cl. C02F 1/28
F16K 11/00

(21)Application number : 08-093558
(22)Date of filing : 22.03.1996

(71)Applicant : TORAY IND INC
(72)Inventor : ITAKURA JUNJI
ISOBE TAKU
TAMATSU SHO

(54) ANCHORED WATER PURIFIER

(57)Abstract:
PROBLEM TO BE SOLVED: To provide an anchored water purifier capable of miniaturizing a valve main body and capable of easily and certainly attaching and detaching the valve main body and a hose.
SOLUTION: This anchored type water purifier is equipped with a valve main body 3 wherein the cam part of a revolving cam 12 is arranged just under the spheres 14a-14c fitted in the distribution ports 13a-13c provided to a holding member 13 and comes into contact with the spheres to float either one of the spheres 14a-14c to open either one of the distribution ports 13a-13c to change over passages, the anchored type filter part communicating with the distribution port 13c and purifying raw water supplied from the valve main body 3, the hose connecting the valve main body 3 and the filter part and a joint member 6 and the connection part 60 of the valve main body 3 and the joint member 6 is constituted in a freely detachable manner by a bayonet mechanism.



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(11)Publication number : 09-253424
(43)Date of publication of application : 30.09.1997

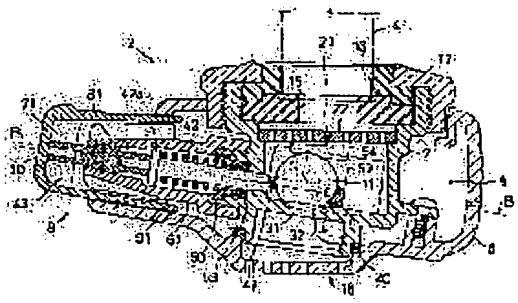
(51)Int.Cl. B01D 35/04
C02F 1/28
F16K 11/00

(21)Application number : 08-090143
(22)Date of filing : 19.03.1996

(71)Applicant : TORAY IND INC
(72)Inventor : ISOBE TAKU
YONEZAWA YASUO
ITAKURA JUNJI

(54) WATER PURIFYING APPARATUS

(57)Abstract:
PROBLEM TO BE SOLVED: To make channel switching easy and sure by a method in which a spherical body in a valve case is displaced by operating a valve operation mechanism, one of outflow openings is closed (opened), while the movement of the valve operation mechanism is stopped temporarily by a temporary stopping mechanism.
SOLUTION: When a button 10 is pushed by an operator, a reciprocating cam 71 slides in the valve case direction in a guide cylinder 61, and a reciprocating shaft 42 and a contact member 41 move toward the second stop position through the slide of the rotary cam 81 of a temporary stopping mechanism 43. By the slide of the contact member 41, the first ball 11, the lower part of which has dropped into the first outflow opening 31, is pushed up to move, and the first outflow opening 31 is closed. After that, when the pushing operation force of the button 10 is released, the rotary cam 81 by the energization of a spring, a rotary cam projected stripe which can not be inserted into a shallow groove is fixed by the side surface parts of guide projected stripes of the slanted tip and upper step of the shallow groove, and both rotary cam 81 and the reciprocating shaft 42 are stopped temporarily by the energization force of the spring 91.



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(11)Publication number : 09-170670
(43)Date of publication of application : 30.06.1997

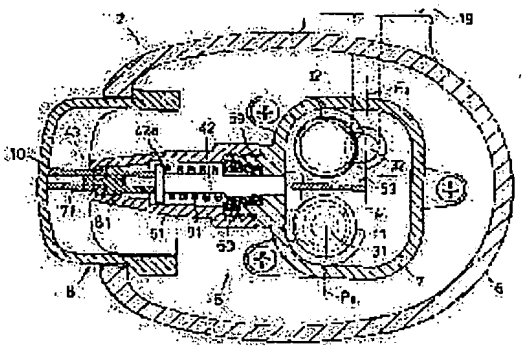
(51)Int.Cl. F16K 11/00

(21)Application number : 07-349220
(22)Date of filing : 19.12.1995

(71)Applicant : TORAY IND INC
(72)Inventor : ISOBE TAKU
YONEZAWA YASUO
ITAKURA JUNJI

(54) MULTI-WAY VALVE

(57)Abstract:
PROBLEM TO BE SOLVED: To convert the flow passage easily and securely, by providing an abutting member to displace a sphere forcibly, and to open and close a discharge port; a pressing member to operate the abutting member; a reciprocating movable member to transmit the displacement to the abutting member; and a temporary stopping mechanism to stop the reciprocating movable member it plural specific positions.



SOLUTION: In the condition a push-button 10 is not pushed, a reciprocating cam 71 and a rotary cam 81 are inserted to the groove of a guide tube 61 of a temporary stopping mechanism 43, the rotary cam 81 is energized by a spring 91 through a reciprocating shaft 42, an abutting member 41 is at a stopping position P1, the discharge port 31 of a valve case 7 is blocked by a ball 11, and a discharge port 32 is opened. When the push-button 10 is pushed, the reciprocating cam 71 is slided in the guide tube 61 in the direction of the valve case 7, the rotary cam 81 is also slided, the reciprocating shaft 42 and the abutting member 41 move to the stopping position P2 side, and the discharge port 31 is opened. When the pressing operation force of the push-button 10 is released, the abutting member 41 stops at the stopping position P2, the discharge port 31 is opened, and the discharge port 32 is blocked. When the push-button 10 is pushed again, all members are restored to the original condition. Consequently, the flow passage can be converted securely in an easy operation.

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PATENT ABSTRACTS OF JAPAN

(11)Publication number : 09-168708
(43)Date of publication of application : 30.06.1997

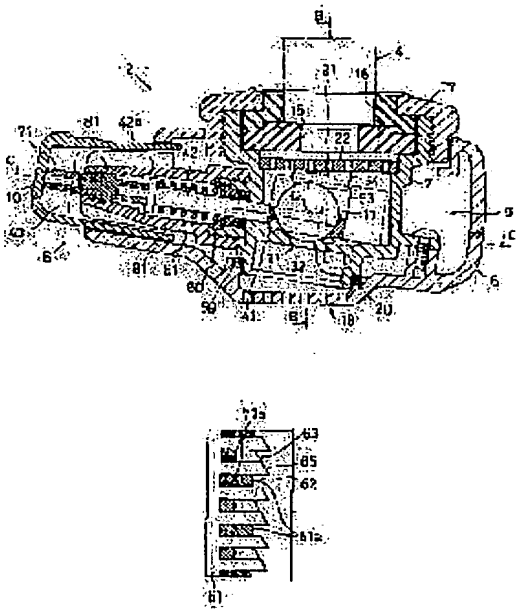
(51)Int.Cl. B01D 35/04
C02F 1/28
F16K 11/00

(21)Application number : 08-090142
(22)Date of filing : 19.03.1996

(71)Applicant : TORAY IND INC
(72)Inventor : ISOBE TAKU
YONEZAWA YASUO
ITAKURA JUNJI

(54) WATER PURIFIER

(57)Abstract:
PROBLEM TO BE SOLVED: To easily and surely perform changeover of a flow path by constituting a multiple port valve provided with both of a reciprocatively movable member for communicating displacement of a push member to an abutting member and of a temporarily stopping mechanism that is engaged with the reciprocatively movable member to temporarily stop movement thereof an maintains the opening/closing state of an outflow port.
SOLUTION: An abutting member 41 exists in a first stopping position through a reciprocating shaft 42 in a state in which a push buttom 10 is not pushed. Raw water introduced from an inflow port 21 is passed through an outflow port 32 and supplied to a filter part. Then, when the push button 10 is pushed, a rotary cam 81 is slid through a rotary cam projected line 81a engaged with the oblique tip of a reciprocating cam projected line 71a. The reciprocating shaft 42 and the abutting member 41 are moved to a second stop position. When the rotating cam projected line 81a is slipped out of a deep groove 62, the projected line 81a is slid along an ablique tip of a guide projected line 65 and the rotary cam 81 is rotated by half pitch. As a result, such a flow path is built up as raw water introduced from the inflow port 21 is passed through an outflow port 31 and discharged from a shower discharge port 18.



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PATENT ABSTRACTS OF JAPAN

(11)Publication number : 09-144913
(43)Date of publication of application : 03.06.1997

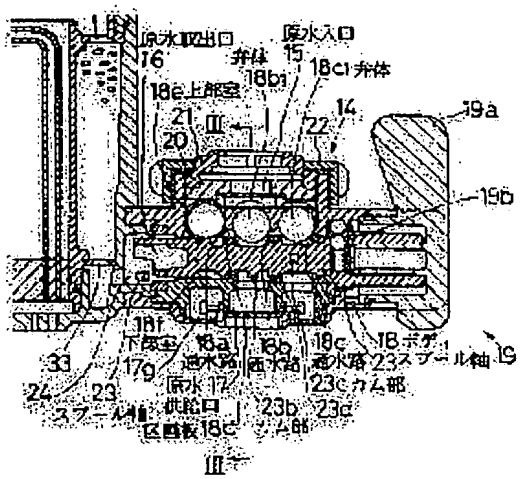
(51)Int.Cl. F16K 11/056
C02F 1/28
C02F 1/44

(21)Application number : 07-300247
(22)Date of filing : 17.11.1995

(71)Applicant : TORAY IND INC
(72)Inventor : ITAKURA JUNJI
ISOBE TAKU
TAMATSU SHO

(54) MULTIDIRECTIONAL VALVE, WATER PURIFIER, AND FLUID DISTRIBUTING AND MIXING METHOD

(57)Abstract:
PROBLEM TO BE SOLVED: To carry out the miniaturization as a whole, and decrease the quantity of fluid, by providing integrally a cam part for releasing a corresponding fluid passage by partially moving a valve element upward with the movement.
SOLUTION: The inside of a body 18 is sectioned by a sectioning plate 18d into an upper chamber 18e and a lower chamber 18f. In a selector valve 19, a seal ring 23d is provided in the prescribed position of a spool shaft (a moving body) 23 and watertightly engaged with the inner wall surface of the lower chamber 18f, and water passing passages 18a, 18b, 18c are respectively communicated with a raw water takeoff port 16, a raw water supplying port 17 and a shower supplying port 17a. A cam part 23b is selectively turned upward by rotating the spool shaft 23, so as to push up the corresponding valve element 18b1 to the prescribed position. As a result, the moving distance of the valve element 18b1 is decreased, accordingly, the body 18 can be miniaturized, the quantity of staying water is decreased, and the sanitary state can be made.



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PATENT ABSTRACTS OF JAPAN

(11)Publication number : 07-116657
(43)Date of publication of application : 09.05.1995

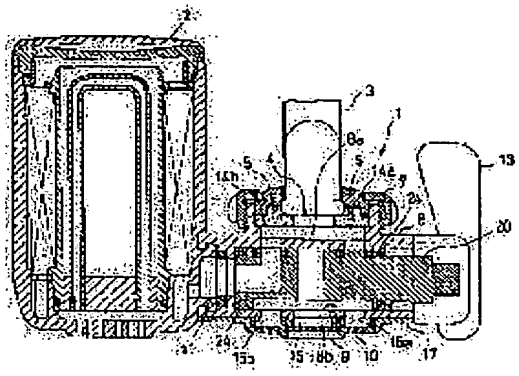
(51)Int.Cl. C02F 1/28
F16K 11/085

(21)Application number : 05-287480
(22)Date of filing : 21.10.1993

(71)Applicant : TORAY IND INC
(72)Inventor : ITAKURA JUNJI
NOGUCHI KIYOSHI
TANNO TAKAO

(54) WATER PURIFIER

(57)Abstract:
PURPOSE: To obtain a water purifier capable of discharging a large amt. of water and equipped with a small-sized passage changeover mechanism.
CONSTITUTION: The main body 1 connected to a cock and a filter part 2 are integrally connected and the main body 1 is equipped with the first and second water passing holes 14a, 14b provided to the upper wall 8a partitioning a raw water inlet 4 and a valve chamber in which a passage changeover valve 20 is inserted, the shower drain holes 15a, 15b provided to a lower wall 8b, a raw water drain hole 16 and the water sending port 11 provided to a side end surface. The passage changeover valve 20 is equipped with the first water passage 21 formed by shaving off the circumferential surface of a valve steam 20a in a U-shape, the second water passage piercing the valve steam 20a and the water passage for the filter part piercing the valve stem from an upper surface toward the water sending port 11 and has first, second and third sealing members arranged to the peripheral surface region of the first water passage 21, the region opposed to the second water passing hole and the water inlet part of the water passage for the filter part.



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[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

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[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 62-180176
(43)Date of publication of application : 07.08.1987

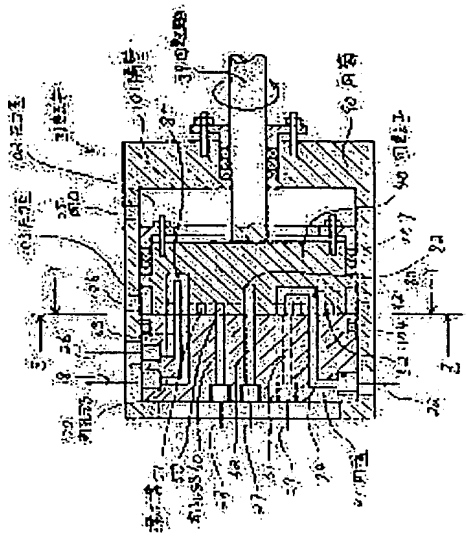
(51)Int.Cl. F16K 3/08
F16K 11/074

(21)Application number : 61-022013
(22)Date of filing : 05.02.1986

(71)Applicant : TORAY IND INC
(72)Inventor : TOMIJIMA TAKESHI
OGAWA YOSHIAKI

(54) ROTARY VALVE

(57)Abstract:
PURPOSE: To obtain a rotary valve giving a less fluid leak by forming a pressure chamber at the back of a rotary valve rotor, a small diameter part at the side of the rotor in contact with a disc having a passage, and a pressure chamber between said small diameter part and an external casing cylinder.
CONSTITUTION: A disc 41 having a passage and a rotor 40 in contact with the side of said disc 41 and able to change over the passage in said disc 41 through turning are provided within a casing cylinder 90. The rotor 40 at the side of the disc 41 is so made as to have a small diameter and the part having the small diameter and the internal wall of the casing cylinder 90 form a pressure chamber 103. Also, another pressure chamber 102 is formed at the opposite side of the disc 41 of the rotor 40 and this rotor 40 is so positioned as to be able to move finely in an axial direction. When the rotor 40 is turned, the pressure chamber 102 is kept at a low pressure level and, when the rotor 40 is fixed, at a high pressure level. Consequently, the pressure chamber 103 is always fed with the same kind of a pressurized fluid as a working fluid, thereby reducing a fluid leak at a rotary valve.



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[Date of registration]

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[Date of extinction of right]

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 62-155380
(43)Date of publication of application : 10.07.1987

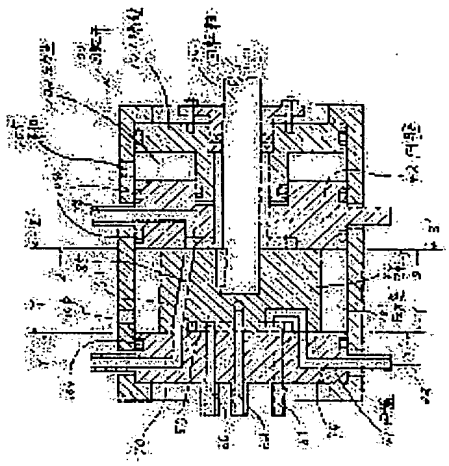
(51)Int.Cl. F16K 11/074

(21)Application number : 60-294473
(22)Date of filing : 26.12.1985

(71)Applicant : TORAY IND INC
(72)Inventor : TOMIJIMA TAKESHI
OGAWA YOSHIAKI

(54) ROTARY VALVE

(57)Abstract:
PURPOSE: To prevent leak of fluid, by a method wherein a disc can be reciprocated within a cylinder by a trace distance, and a hollow columnar space, formed between a cylinder and a rotor, forms a pressure chamber.
CONSTITUTION: Discs 41 and 42 and a rotor 40 are situated in a cylinder 90 to form a rotary valve 100. The disc 41 and 42 are in a manner to be firmly adhered to the inner surface of the cylinder 90 and the disc 42 is situated so that it can reciprocate within the cylinder by a trace distance. A space, formed by the disc 42, the cylinder 90, and a partition wall 101, and a hollow columnar space, formed by the rotor 40 and the cylinder 90, are formed as pressure chambers 102 and 103, respectively. This constitution enables completely perfect prevention of leak of fluid past a contact surface between the disc and the rotor.



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[Date of extinction of right]

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 58-187666
(43)Date of publication of application : 01.11.1983

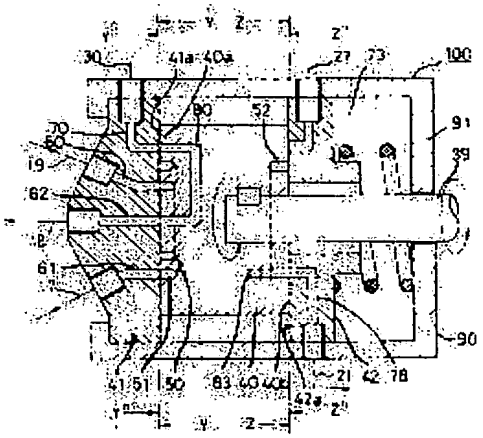
(51)Int.Cl. F16K 11/06

(21)Application number : 57-068783
(22)Date of filing : 26.04.1982

(71)Applicant : TORAY IND INC
(72)Inventor : MIWA KINOO
KIHARA MAKOTO
SAKATANI KAZUYUKI
INOUE TAKEHISA

(54) ROTARY VALVE

(57)Abstract:
PURPOSE: To simplify the control and lower the cost, by arranging rotatably a rotor between fixed plates having passages, the rotor being for changing over the passages and for shutting off the passages.
CONSTITUTION: A rotor 40 is situated between a first fixed plate 41 having a plurality of passages 70, 60, 61, 62 and a second fixed plate 42 having a plurality of passages 73, 78 for changing over the passages or shutting off the passages. Thus, since functions such as supplying or collecting fluids using a plurality of on-off valves that are required in an attraction-separation system can be carries out by the single rotary valve, the control can be substantially simplified. Further as the number of valves can be reduced, the cost is also lowered.



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[Date of registration]

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PATENT ABSTRACTS OF JAPAN

(11)Publication number : 58-134286
(43)Date of publication of application : 10.08.1983

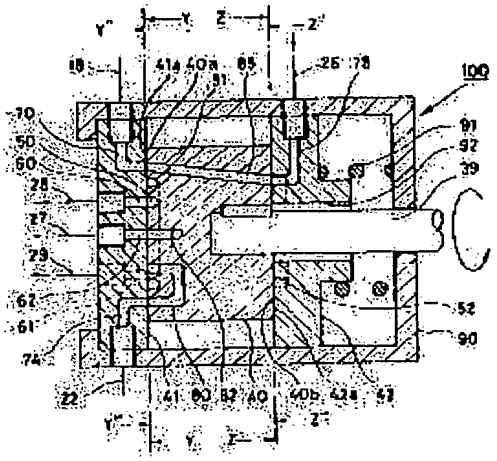
(51)Int.Cl. F16K 11/06

(21)Application number : 57-016823
(22)Date of filing : 04.02.1982

(71)Applicant : TORAY IND INC
(72)Inventor : MIWA KINOO
KIHARA MAKOTO
SAKATANI KAZUYUKI
INOUE TAKEHISA

(54) ROTARY VALVE

(57)Abstract:
PURPOSE: To lower the whole pressure for sticking a fixed board by rotatably disposing a rotor between a plurality of fixed boards.
CONSTITUTION: A rotor 40 is positioned between fixed boards 41, 42 and urged by a rotary shaft 39. A spring 91 is disposed between a fixed board 42 and an outer shell 90 to press the rotor 40 and the fixed board 42 against the fixed board 41, thereby to prevent a fluid from leaking from their contact surfaces. The end surface 40a of the rotor 40 is provided with circular grooves 50, 51 disposed concentricaly with the rotary shaft 39. The end surface 42a of the fixed board 42 is provided with a circular groove 52 disposed concentrically with the rotary shaft 39. Thus, the concentric circular grooves are divided into two contact surfaces.



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[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

(19)日本国特許庁（ＪＰ）　(12)公開特許公報（Ａ）　(11)特許出願公開番号
特開2003－156160
（P2003－156160A）
(43)公開日　平成15年５月30日(2003.5.30)

(51)Int.Cl.[7]	識別記号	Ｆ Ｉ		テーマコード（参考）
Ｆ１６Ｋ　11/14		Ｆ１６Ｋ　11/14	Ｚ	３Ｈ０５２
Ｂ０１Ｄ　35/04		Ｂ０１Ｄ　35/04		３Ｈ０６７
Ｃ０２Ｆ　1/28		Ｃ０２Ｆ　1/28	Ｓ	４Ｄ００６
1/44		1/44	Ｂ	４Ｄ０２４
Ｆ１６Ｋ　1/14		Ｆ１６Ｋ　1/14	Ａ	４Ｄ０６４

審査請求　未請求　請求項の数４　ＯＬ　（全 ６ 頁）　最終頁に続く

(21)出願番号　特願2001－355718(P2001－355718)

(22)出願日　平成13年11月21日(2001.11.21)

(71)出願人　000003159
東レ株式会社
東京都中央区日本橋室町２丁目２番１号
(72)発明者　板倉　純二
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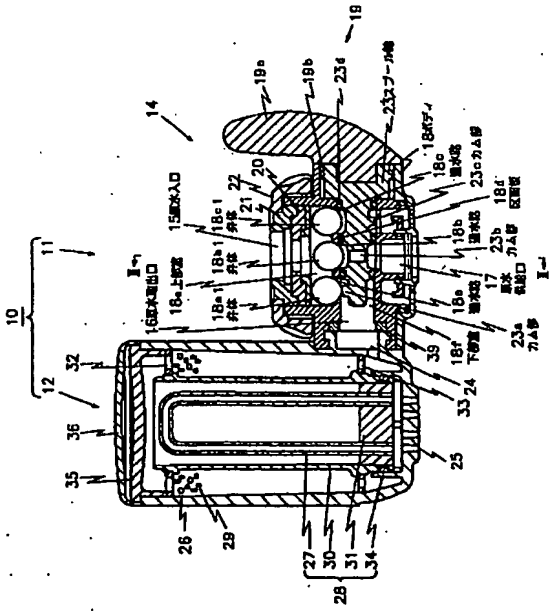
最終頁に続く

(54)【発明の名称】　切換器および浄水器

(57)【要約】
【課題】切換器を全体として小型化するとともに供給口への流量または水圧を任意に分配する。
【解決手段】隔室１８内に、複数の流体通路１８ａ，１８ｂ，１８ｃにより互いに連通された下部室１８ｆと上部室１８ｅとを設け、各流体通路１８ａ，１８ｂ，１８ｃに上部から係合して流体の流通を阻止するとともに、流体の流通を阻止する状態において一部が下部室１８ｆ側に突出する弾性体である弁体１８ａ１，１８ｂ１，１８ｃ１を有し、下部室１８ｆに移動可能に収容されているとともに、移動に伴って弁体１８ａ１，１８ｂ１，１８ｃ１のいずれか１つを上方に移動させたとき、水圧により弁体を変形させることにより、流体の通路を減少させる。弁体の移動は該当する流体通路を開放するカム部２３ａ，２３ｂ，２３ｃが一体的に設けられてなる移動体２３を有している。



CLAIMS

[Claim(s)]
[Claim 1] It is the change machine characterized by being the change machine which is made to move two or more valve elements, and forms the water flow way of a fluid, and at least one of the valve elements of these plurality having the elastic member layer which has 50% or more of volume of each valve element volume on a surface.
[Claim 2] It is the change machine according to claim 1 which is a change machine which is made to move two or more valve elements, and forms the water flow way of a fluid, and is characterized by being that to which the water pressure in the downstream of a valve element is changed about the flow direction of a feedwater while at least one of the valve elements of these plurality deforms with the water pressure of a feedwater and changing the cross section of a water flow way.
[Claim 3] While preparing in a cell the up room which has an input through a partition board, and the lower room which has two or more tap holes While preparing two or more fluid channels which open both loculus for free passage to the above-mentioned partition board at **, engaging with each of this fluid channel from an up room side and preventing circulation of a fluid While preparing the valve element to which a part projects in a lower room side in the state of preventing circulation of a fluid and holding in the lower room possible [movement] The change machine according to claim 1 or 2 characterized by having the mobile in which it comes to prepare the cam section which moves the valve element which projects in the above-mentioned lower room side with movement to the position which opens a fluid channel.
[Claim 4] The water purifier characterized by having the change machine of a publication in either of the claims 1-3.

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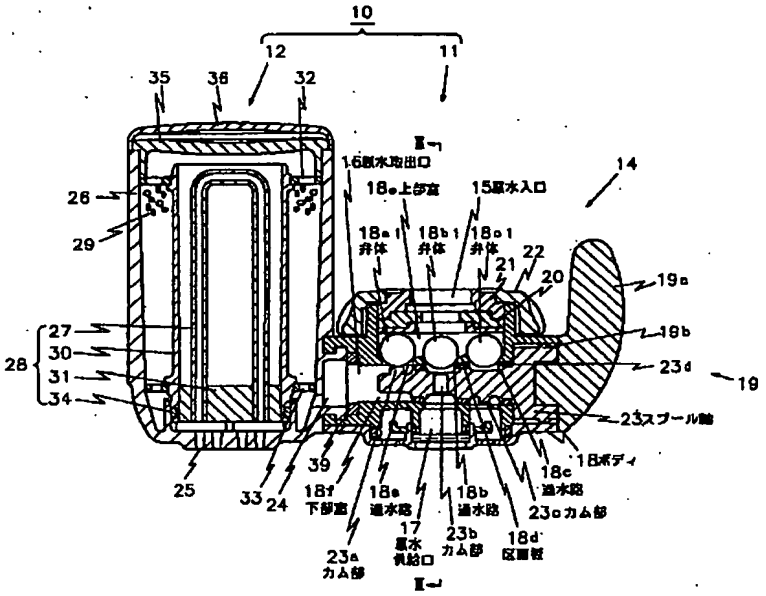
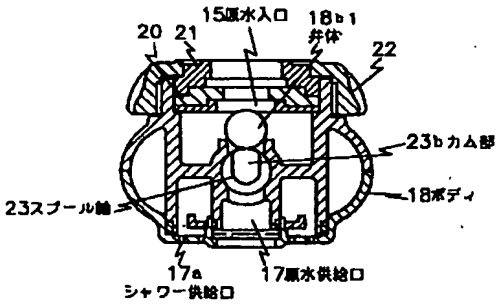
3.In the drawings, any words are not translated.

DRAWINGS

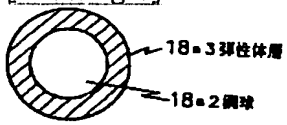
[Drawing 1]



[Drawing 2]



[Drawing 3]



[Translation done.]

(19)日本国特許庁（ＪＰ）　(12)公開特許公報（A）　(11)特許出願公開番号
特開2003－156161
（P2003－156161A）
(43)公開日　平成15年５月30日(2003.5.30)

(51)Int.Cl.⁷	識別記号	ＦＩ		テーマコード（参考）
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Ｃ０２Ｆ　1/28		Ｃ０２Ｆ　1/28	Ｓ	４Ｄ０２４

審査請求　未請求　請求項の数５　ＯＬ　（全 ５ 頁）

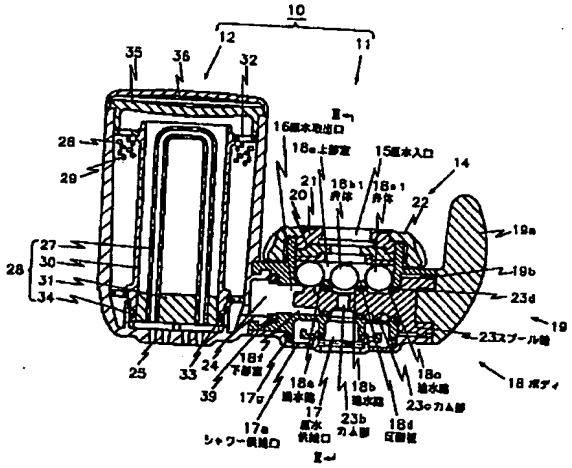
(21)出願番号　特願2002－213562(P2002－213562)
(22)出願日　平成14年７月23日(2002.7.23)
(31)優先権主張番号　特願2001－270018(P2001－270018)
(32)優先日　平成13年９月６日(2001.9.6)
(33)優先権主張国　日本（ＪＰ）

(71)出願人　000003159
東レ株式会社
東京都中央区日本橋室町２丁目２番１号
(72)発明者　板倉　純二
滋賀県大津市園山１丁目１番１号　東レ株式会社滋賀事業場内
(72)発明者　米澤　康男
滋賀県大津市園山１丁目１番１号　東レ株式会社滋賀事業場内

最終頁に続く

(54)【発明の名称】　流路切換器

(57)【要約】
【課題】切換操作力を小さくしつつ高いシール性および耐久性を発揮できる流路切換器を提供する。
【解決手段】ボディを有し、そのボディ内には、流体流入口を有する上部室および複数個の流体流出口を有する下部室を形成する区画板と、上部室と複数個の流体流出口のそれぞれとを連通する、区画板に設けられた複数個の流体通路と、区画板に当接して流体通路を閉塞する複数個の弁体とを備え、かつ、区画板の、弁体が当接する部位が弾性体で形成されている流路切換器とする。



CLAIMS

[Claim(s)]

[Claim 1] The passage change machine characterized by forming the part which is equipped with the following and the valve element of a partition board contacts by the elastic body. The partition board which forms the lower room which has the body and has the up room and two or more fluid tap holes which have a fluid input in the body. Two or more fluid channels prepared in the partition board which opens an up room and each of two or more fluid tap holes for free passage. Two or more valve elements which blockade a fluid channel in contact with a partition board.

[Claim 2] The part which a valve element contacts is a passage change machine according to claim 1 or 2 currently formed by the elastic body in within the limits whose rubber degree of hardness is 50 - 95 degrees.

[Claim 3] The passage change machine according to claim 1 to 3 with which the valve element consists of non-corrosive members.

[Claim 4] A partition board is a passage change machine according to claim 1 to 3 with which it has the part which a valve element contacts, and the part which a valve element does not contact, and the body and the part which the part which the valve element of a partition board contacts, and a valve element do not contact are fabricated by thermoplastics in one.

[Claim 5] The water purifier equipped with one of the passage change machines and filtering mediums of claims 1-4.

[Translation done.]

* NOTICES *

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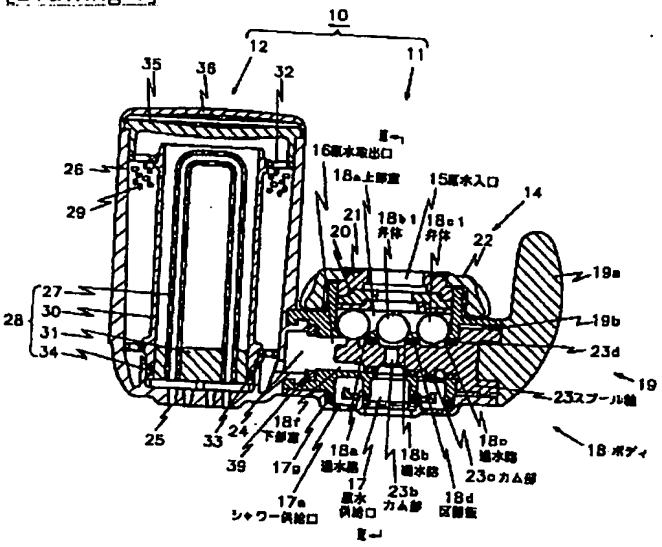
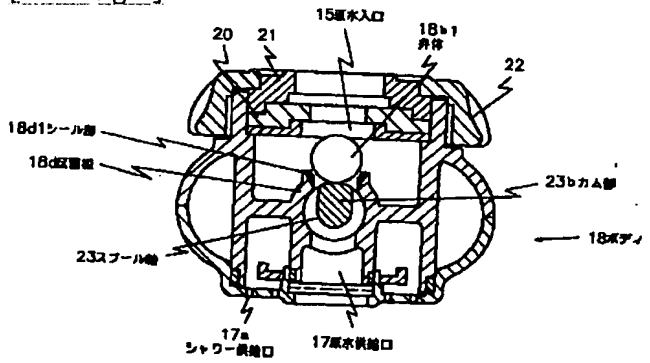
3.In the drawings, any words are not translated.

DRAWINGS

[Drawing 1]



[Drawing 2]



[Translation done.]